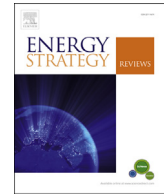


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CASE STUDY

Oil and gas service contracts around the world: A review[☆]Abbas Ghandi^a, C.-Y. Cynthia Lin^{b,*}^a Institute of Transportation Studies, University of California at Davis, One Shields Avenue, 1605 Tilia Street, Suite 100, Davis, CA 95616, United States^b Agricultural and Resource Economics, University of California at Davis, One Shields Avenue, Davis, CA 95616, United States

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ABSTRACT

This paper reviews the energy strategy and oil and natural gas fiscal systems of eight major oil or natural gas producing countries which have either adopted a variation of a service contract or have shown interest in this framework as an alternative to production sharing contracts over the period 1990–2014. In particular, we look at each country's variation of service contract, and examine how these variations of service contracts are different from each other. A service contract is a long-term contractual framework that is used by some host governments to acquire the international oil companies' expertise and capital without having to hand over the field and production ownership rights to them. Our review suggests that the new interest in service contracts might be explained partially by heightened sovereignty concerns and the political environment on one hand, and the need for international oil companies' capital and know-how in developing oil and natural gas fields in the host countries on the other. In our review, we also explore some of the drawbacks of service contracts including the potential for economically inefficient outcomes. In addition, we look at some possible solutions for improving the economic efficiency of service contracts.

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1. Introduction

In recent years, some oil and natural gas producing countries have shown an increasing interest in adopting variations of service-type contracts rather than production sharing contracts or concessions in their oil and natural gas development and exploration projects. A service contract¹ is a long-term contractual framework that governs the relation between a host government and international oil companies (IOCs) in which the IOCs develop or explore oil or natural gas fields on behalf of the host government in

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* Corresponding author.

E-mail addresses: aghandi@ucdavis.edu (A. Ghandi), cclin@primal.ucdavis.edu (C.-Y.C. Lin).

¹ The term service contract can also refer to oilfield service contracts. There are oilfield service firms, such as Halliburton, Schlumberger and Baker Hughes, that provide oilfield services and that may specialize in services such as drilling. These firms are awarded oilfield service contracts to fulfill particular jobs as part of broader development or exploration plans. Sund and Hausken [57] analyze when an operator and a service provider prefer a fixed price oilfield service contract, common in the oil and gas industry, versus the uncommon incentive-based oilfield service contract. In this paper, we focus on service contracts between host governments and international oil companies, not on oilfield service contracts between an operator and a service provider.

Table 1
Petroleum fiscal arrangements.

	Concessionary System	Contractual system	
	Concession	Production sharing contracts	Service contracts
Oilfield ownership	IOC	NOC	NOC
Crude production ownership	IOC	IOC/NOC	NOC
Oilfield operator	IOC	IOC	IOC/NOC
How the IOC is compensated	N/A	A share of production	Flat fee
Who bears the risk	IOC	IOC/NOC	IOC/NOC

Notes: IOC denotes “international oil company”. NOC denotes “national oil company”.

return for pre-determined fees and in which in most cases the host government does not hand over the control of the extracted or subsoil or sub-surface resources to the IOCs.²

The move towards service contracts is reminiscent of a similar transition towards production sharing contracts away from concessionary systems starting in 1966 in Indonesia.³ While opposition against international oil companies’ control over the world oil prices and sovereignty issues over natural resources might have been the main driving factors behind the adoption of production sharing contracts in the 1960s [38], it seems that the new interest in service contracts might be explained partially by heightened sovereignty concerns on one hand, and the need for international oil companies’ capital⁴

² In some variations of service contracts such as Venezuela’s third round operational service agreements, the IOCs may enjoy more benefit than usual service contracts in terms of sharing the profit oil, and therefore have some degree of control over the produced crude. However, in general, service contracts do not have a profit sharing mechanism.

³ In August 1966, the first version of a production sharing contract was signed between Indonesia’s state owned company, PERTAMINA, and Independent Indonesian American Petroleum (IIPCO) group [38].

⁴ The degree of need for the IOCs’ capital varies in each country and for different projects inside a country. In some cases, a country’s bad credit rating may leave the country no other option than to fund the projects through the IOCs’ capital and pay back them later. This could be the case in production sharing as well. In addition, the IOCs might have access to cheaper capital compared to what is available for the host governments. In other words, it might be cheaper for the countries to borrow from the IOCs than to finance their development projects through other sources. In the case of Iraq, due to the fast cost recovery mechanism embedded in the technical service contracts, it may look that the country did not need the IOCs’ capital. However, the total cost of development of all the awarded fields in the first two rounds may suggest that financing through government annual budget was really hard and may be impossible (personal communication with industry experts).

⁵ In addition to the need to IOCs capital, the participation of the IOCs allows the government to benefit from their know-how. The know-how is sometimes bigger than just the technology. It also includes project management in terms of how the capital is invested since IOCs have better advantage on the process and structural system of managing large scale investment (personal communication with industry experts).

and know-how⁵ in developing oil and natural gas fields⁶ in the host countries on the other. As argued by Ghandi and Lin [17] for the case of Iran, several major OPEC and non-OPEC oil producing countries have found service-type contracts a means to address both sovereignty concerns, which mostly are reflected in these countries’ constitutions and petroleum laws and regulations, and the need for IOCs’ capital and expertise capabilities. As we describe for each of the eight countries we examine in this paper, the political environment is a contributing factor for the heightened sovereignty concerns and the move toward service-type contracts as well.

In the late 1980s and early 1990s, service-type contractual frameworks started to appear in the political economy of several major oil or natural gas producing countries. Venezuela, Kuwait and Iran signed their first of such contracts in 1991, 1992 and 1995, respectively. More recently Iraq, Mexico, Bolivia, Ecuador and Turkmenistan have signed new service contracts, or have shown more interest in adopting variations of service-type contracts rather than production sharing contracts in order to explore and develop their oil and natural gas fields.

This paper presents a short review of service contracts in the above eight countries. First, we compare service contracts and production sharing contracts and provide some reasons for the move towards service contracts. We then discuss some potential drawbacks of service contracts, mostly due to the loss of profit through time, which is interpreted as economic inefficiency. In addition, we look at some possible solutions for improving economic efficiency of service contracts. Then we discuss thoroughly the oil and natural gas fiscal system in each of the eight countries mentioned above. In particular, we study each country’s variation of service contract, and how these variations of service contracts are different from each other. We also examine the political

⁶ This is particularly the case for mature fields that require enhanced oil recoveries or fields in more challenging locations.

environment and other sources of heightened sovereignty concerns in each country. Finally, we conclude with an emphasis on the sovereignty concerns as an explanatory factor for the move towards the service contracts and the consequence of such decisions in terms of economically inefficient outcomes.

2. Service versus production sharing contracts

Table 1 summarizes some of the differences between four petroleum fiscal regimes: concessions, production sharing contracts, and service contracts. In this section we focus on comparing service contracts with production sharing contracts.

In a service contract, similar to a production sharing agreement, the closest legal framework, the international oil company brings the technology and makes the upfront capital investment. However, in contrast to production sharing contracts, in a service contract the IOCs agree to a pre-determined return in lieu for sharing profit oil. In addition to the IOC’s method of compensation, service contracts and production sharing contracts could also differ in four other major categories: field ownership rights, produced crude ownership rights, field’s operatorship, and the degree of risk that each side bears. These differences are summarized in Table 1.

One main driving factor why many countries are adopting a variation of service contracts is their concern for maintaining their sovereignty over their natural resources. Under a service contract, countries maintain field ownership and in most cases produced crude ownership rights as well, and do not have to allocate them to the foreign company. Countries are interested in adopting service contracts because service contracts enable them to give up less control over the fields and over the produced crude to foreign oil companies while still using the expertise of these companies.

With production sharing contracts, sovereignty concerns arise in part because these contracts give decision-making power to the international oil companies in handling the development/exploration and operation.

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